

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-27. (Canceled)

28. (Currently Amended) A medical device comprising
an elongate body adapted for insertion into a body lumen, said elongate body having
distal and proximal ends and an axis;
an inflatable balloon disposed about a distal region of the elongate body; and
an active region comprising a conductive polymer disposed over the elongate body
and at least partially beneath the inflatable balloon, wherein said active region is configured to
volumetrically expand in when exposed to an electrical potential; [[and]]
a passive deformable member disposed over the elongate body and beneath the
inflatable balloon;
a first marker slidably disposed about the elongate body and engaged to the active
region; and
a second marker fixedly disposed about the elongate body, and wherein the passive
deformable member is disposed between the proximal marker and the distal marker, wherein,
when said active region is exposed to said electrical potential, said active region slides the
first marker along the elongate body towards the second marker, causing ~~causes~~ said passive
deformable member to expand in at least one radial dimension, thereby moving at least a
portion of the inflatable balloon from a substantially uninflated state to a first expanded state.

29. (Canceled)

30. (Previously Presented) The medical device of claim 28, wherein said passive
deformable member is adapted to radially advance a proximal portion of said inflatable
balloon when said active region is exposed to said electrical potential.

31. (Previously Presented) The medical device of claim 28, wherein said passive deformable member is adapted to radially advance proximal and distal portions of said inflatable balloon when said active region is exposed to said electrical potential.

32. (Previously Presented) The medical device of claim 28, wherein said passive deformable member is adapted to radially advance proximal, central and distal portions of said inflatable balloon when said active region is exposed to said electrical potential.

33-35. (Canceled)

36. (Previously Presented) The medical device of claim 28, wherein said active region surrounds said elongate body in the form of a continuous circumferential band.

37. (Original) The medical device of claim 28, wherein said active region is provided over said elongate body in the form of a longitudinal member.

38-42. (Canceled)

43. (Withdrawn) A method comprising:
inserting the medical device of claim 28 into a body lumen;
volumetrically expanding the conductive polymer within said active region such that at least a portion of the balloon is radially advanced to a first position by the passive deformable member while in a substantially uninflated state; and
inflating said balloon such that said balloon is radially advanced from said first position to a second position that is radially beyond the first position.

44-49. (Canceled)

50. (Currently Amended) A balloon catheter for expanding a stent, comprising:
a catheter shaft adapted for insertion into a body lumen of a patient, said catheter shaft

defining an inflation lumen;

an inflatable balloon disposed about a distal region of said catheter shaft, wherein the interior of said inflatable balloon is in fluid communication with said inflation lumen;

one or more electrically actuated members disposed in a recess formed in the distal region of said catheter shaft, wherein said one or more electrically actuated members are bands disposed around the catheter shaft, radially positioned between said elongated shaft and said inflatable balloon such that an inner surface of the one or more electrically actuated members is attached to an outer surface of the catheter shaft and an outer surface of the one or more electrically actuated members is configured to be in contact with an inner surface of the inflatable balloon, wherein, when activated, said one or more electrically actuated members radially expand such that the outer surface of the one or more electrically actuated members contacts the inner surface of the inflatable balloon and transforms said inflatable balloon from a radially contracted state in which said balloon catheter is more readily inserted into said body lumen of said patient to a first radially expanded state, wherein said inflatable balloon is configured to be further expanded to a second radially expanded state with an inflation media received via the inflation lumen, wherein the second radially expanded state is larger than the first radially expanded state;

a proximal marker and a distal marker, wherein the one or more electrically actuated members are positioned longitudinally between the proximal marker and the distal marker, wherein the proximal marker and the distal marker are disposed around the catheter shaft beneath the inflatable balloon; and

a stent associated with the inflatable balloon, wherein transforming said inflatable balloon from the radially contracted state to the first radially expanded state with the one or more electrically actuated members expands the stent outwardly from a fully crimped state.

51-52. (Canceled)

53. (Withdrawn) The balloon catheter of claim 50, wherein a cross-sectional area of said lumen in said first radially expanded state is at least 25% greater than the cross-sectional area of said lumen in said radially contracted state.

54. (Previously Presented) The balloon catheter of claim 50, wherein said one or more electrically actuated members are electroactive polymer actuators.

55. (Withdrawn) The balloon catheter of claim 50, wherein said or more electrically actuated members are piezoelectric actuators.

56. (Previously Presented) The balloon catheter of claim 50, wherein said one or more electrically actuated members comprises a single electrically actuated member.

57. (Previously Presented) The balloon catheter of claim 50, wherein said one or more electrically actuated members comprises a plurality of electrically actuated members.

58. (Withdrawn) The balloon catheter of claim 50, wherein said one or more electrically actuated members contain regions of narrowed cross-section, thereby increasing flexibility along the length of said catheter shaft.

59. (Withdrawn) The balloon catheter of claim 50, wherein said one or more electrically actuated members are adapted to bend or unbend in response to an applied voltage.

60-61. (Canceled)

62. (Withdrawn) The balloon catheter of claim 50, wherein said one or more electrically actuated members are disposed on an outside surface of said catheter shaft.

63. (Previously Presented) The balloon catheter of claim 50, wherein said catheter shaft is an extruded body.

64. (Canceled)

65. (Withdrawn) The balloon catheter of claim 50, wherein said catheter shaft further defines a guidewire lumen.

66. (Withdrawn) The balloon catheter of claim 50, wherein said catheter shaft defines multiple lumens.

67-77. (Canceled)

78. (Withdrawn) The balloon catheter of claim 50, wherein said one or more electrically actuated members are adapted to coil or uncoil in response to an applied voltage.

79. (Withdrawn) The balloon catheter of claim 50, wherein said one or more electrically actuated members are electrostrictive actuators.

80-84. (Canceled)

85. (Previously Presented) The balloon catheter of claim 50, wherein a plurality of said active regions are disposed over the elongate body and beneath the balloon.

86. (Previously Presented) The balloon catheter of claim 50, further comprising a sealed structure that encloses said active region, an electrolyte and a counter electrode.

87. (Previously Presented) The balloon catheter of claim 50, further comprising a plurality of said active regions wherein a first active region is disposed over a first conductive radio-opaque band and wherein a second active region is disposed over a second conductive radio-opaque band that is positioned distal to said first conductive radio-opaque band.

88-89. (Canceled)

90. (Currently Amended) The balloon catheter of claim ~~[[89]]~~ 50, wherein the proximal marker and the distal marker are configured to have an outer diameter that is greater than the outer diameter of the one or more electrically actuated members when the one or more electrically actuated members are in a non-activated state.

91-92. (Canceled)

93. (Currently Amended) The medical device of claim ~~[[92]]~~ 28, wherein the first marker is proximal of the second marker

94. (Previously Presented) The medical device of claim 28, wherein said deformable member is an elastic member.

95. (Previously Presented) The medical device of claim 28, wherein said deformable member includes a rubber material.